



# Australian Bureau of Statistics

## 6227.0 - Education and Work, Australia, May 2009

Previous ISSUE Released at 11:30 AM (CANBERRA TIME) 24/11/2009

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## Summary

### Main Features

#### NOTES

##### ABOUT THIS PUBLICATION

This publication presents information about the educational experience of persons aged 15-64 years, and persons aged 65 to 74 who are in the labour force or marginally attached to the labour force, especially in relation to their labour force status.

Statistics in this publication were collected in May 2009 as a supplement to the Australian Bureau of Statistics' (ABS) monthly Labour Force Survey (LFS).

Information collected in the survey includes: labour force characteristics; participation in education in the year prior to the survey, and in the survey month; type of educational institution; level of education of current and previous study; highest year of school completed; level of highest non-school qualification; level of highest educational attainment; transition from education to work; enrolment experience; selected characteristics of apprentices and trainees; and unmet demand for apprenticeships and traineeships.

Unless otherwise specified, differences between data items highlighted in the Summary of Findings are statistically significant.

This publication includes Data Cubes in spreadsheet format available on the ABS website <<http://www.abs.gov.au>>. An expanded range of statistics in spreadsheet format will supplement this publication and will also be available on the ABS website at a later date.

#### ROUNDING

As estimates have been rounded, discrepancies may occur between sums of the component items and totals.

#### INQUIRIES

For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070.

# Summary of Findings

## SUMMARY OF FINDINGS

### PARTICIPATION

In May 2009, there were 14.2 million people aged 15-64 years (Table 2) and 270,400 people aged 65-74 years in the labour force or marginally attached to the labour force (Table 16) who were in the scope of the survey.

Of those aged 15-64 years, 2.7 million (19%) were enrolled in a course of study. Approximately 1.0 million (38%) of these enrolled people were attending a higher education institution, 740,000 (28%) were at school, 575,500 (21%) were at Technical and Further Education (TAFE) institutions, and 338,600 (13%) were at other educational institutions. (Table 1)

In May 2009, 52% of people aged 15-64 years enrolled in a course of study were female, 42% were aged 15-19 years, and 64% were studying full-time (Table 1).

### Study for a qualification

Approximately 96% (2.6 million) of people aged 15-64 years who were enrolled in a course of study were enrolled in a course for a qualification (Table 1). The proportion of people aged 15-64 years who were enrolled in a course for a qualification increased from 17% in 2001 to 18% in 2009. For females aged 15-64 years, approximately 17% were enrolled in a course of study for a qualification in 2001, compared to 19% in 2009. Male enrolments in a course of study for a qualification were 17% in 2001 and 18% in 2009. (Table 2)

Two in five (40%) people aged 15-64 years enrolled in a non-school qualification were studying for a Bachelor Degree. Almost half of these people (48%) were aged 20-24 years and 26% were aged 15-19 years. Of the 977,400 females aged 15-64 years enrolled in a non-school qualification, 56% were completing a Bachelor Degree or higher qualification, compared to 52% of 848,000 males. (Table 3)

The most commonly reported main field of education of current study for people aged 15-64 years enrolled in a non-school qualification was Management and commerce (26%), followed by Society and culture (19%). Over one-fifth (21%) of males aged 15-64 years enrolled in a non-school qualification were studying in the main field of Engineering and related technologies, compared to 2% of females aged 15-64 years. Of the 352,900 people aged 15-64 years enrolled in the field of Society and culture, 70% were female (Table 4). People studying in the main field of Information technology decreased from 9% of persons aged 15-64 years enrolled in a non-school qualification in 2001 to 3% in 2009. (Table 7)

### ATTAINMENT

#### Level of highest non-school qualification

The proportion of people aged 15-64 years with a non-school qualification increased from 47% in May 2001 to 55% in May 2009, with the proportion of people with a Bachelor Degree or above increasing from 17% in May 2001 to 23% in May 2009. The proportion of people whose highest non-school qualification was an Advanced Diploma or below increased from

29% in May 2001 to 31% in May 2009. The proportion of people aged 20-24 with a non-school qualification has not changed significantly between May 2001 (43%) and May 2009 (44%), while the proportion of people aged 25-34 with a non-school qualification increased from 59% in May 2001 to 69% in May 2009. (Table 8)

### PROPORTION OF PEOPLE AGED 20-24 YEARS AND 25-34 YEARS WITH A NON-SCHOOL QUALIFICATION, May 2001 to May 2009



Of the 7.8 million people aged 15-64 years with a non-school qualification, 83% were employed, compared to 64% without a non-school qualification. Over three-quarters (77%) of employed people with a non-school qualification were employed full-time, compared to 62% of employed people without a non-school qualification. (Table 10)

In May 2009, 10.7 million people aged 15-74 years were employed. Of these people, those whose highest non-school qualification was a Postgraduate Degree were more likely to be employed as Professionals (60%) and Managers (19%). People without a non-school qualification were more likely to be employed as Clerical and administrative workers (19%) and Labourers (18%). (Table 11)

Among the 7.8 million people aged 15-64 years in May 2009 with a non-school qualification, the most commonly reported main fields of education for the highest non-school qualification were Management and commerce (1.8 million or 24%) and Engineering and related technologies (1.4 million or 18%). In May 2009, more males than females aged 15-64 years had a non-school qualification (4.0 million and 3.8 million respectively). Out of the total number of females in each age group within the survey, the highest proportion (70%) of females with a non-school qualification were aged 25-34 years, with the next highest proportion being 61% of females aged 35-44 years. The proportion of males with a non-school qualification was 67% for those aged 25-34 years and 35-44 years. (Table 2 and Table 12)

### Level of highest educational attainment

Almost one-third (31%) of people aged 15-64 years reported their level of highest educational attainment as Year 11 or below and 21% reported Year 12. Additionally, almost one in four (23%) had a highest level of attainment of Bachelor Degree or above and 16% had a Certificate III or IV. Compared to all Australian states and the Northern Territory, a higher proportion of people in the ACT reported Bachelor Degree and above levels of educational attainment. Almost two-fifths (39%) of people in the ACT had a Bachelor Degree or above as their highest level of educational attainment. (Table 14)

In May 2009, of the 1.5 million people aged 65-74 years, 270,400 (18%) were in the labour force or marginally attached to the labour force. Of these, 19% had a Bachelor Degree or above. Over two-fifths (41%) reported their level of highest educational attainment as Year 11 or below. (Table 16)

## **TRANSITION FROM EDUCATION TO WORK**

### **Completing a non-school course of study**

In May 2009, there were 919,700 people aged 15-64 years who were enrolled in a non-school qualification in 2008 but were not enrolled in May 2009. These people were more likely to be employed full-time in May 2009 than the general population (57% compared with 53%). (Table 10 and Table 17)

### **School leavers**

In May 2009, there were 322,600 people aged 15-24 years who were enrolled in secondary school in 2008 but were not in May 2009. Of these school leavers, about half (53%) were enrolled at a non-school institution in 2009 and 28% were employed and not studying. In 2009, 19% of school leavers aged 15-24 years were not engaged in education or work, which is 63% higher than in 2008 (ABS 2008). (Table 20)

## **APPRENTICES**

Between May 2008 and May 2009, the number of people aged 15-64 years who were employed as apprentices and part of the Australian Apprenticeship Scheme reduced from 188,700 to 163,000. During this period, the number of males employed as apprentices decreased by 17% from 166,400 to 138,500. The number of apprentices within the Automotive and engineering Field of trade decreased by 29%. (Table 22)

The number of people who applied for but did not gain a place for an apprenticeship/traineeship increased from 26,900 in May 2008 to 41,200 in May 2009, with unsuccessful male applicants increasing from 18,200 to 28,900. Between May 2008 and May 2009, the number of people who applied for but were unsuccessful in gaining a place for an apprenticeship/traineeship increased by 81% for people aged 15-24 years. (Table 23)

## **About this Release**

Provides selected information on participation in education, highest educational attainment, transition from education to work and current labour force and demographic characteristics for the civilian population aged 15-64 years. Characteristics reported on include: type of educational institution attended or attending; level and main field of education of current study and highest level and main field of educational attainment. Information on unsuccessful enrolment, and deferment of study, is included for persons not studying in the survey year. Data on apprenticeships are also provided. Limited information is also included for persons aged 65-74 years who are in the labour force or marginally attached to it. Some of the statistical tables are presented in time series format.

This product includes Data Cubes and an expanded range of statistics in spreadsheet format available on the ABS website <<http://www.abs.gov.au>>.

# History of Changes

**This document was added or updated on 18/03/2010.**

**15/4/2010** - Additional Information. These data cubes are the seventh and eighth in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. The seventh cube provides data in Excel spreadsheets for persons participating in post school education or training at Certificate III level or above, by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009. The eighth cube provides data in Excel spreadsheets for persons enrolled at educational institutions (all study), by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009.

**15/4/2010** - Reissue. This data cube **Persons who have attained a qualification at Certificate III Level or Above** was reissued on 15 April 2010 to correct a minor error in the comment for the 95% Confidence Interval provided for 2001. Other parts of the data cube are not affected. This data cube, initially released on 18 March 2010, is the second in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. It provides data in Excel spreadsheets for persons who have attained a qualification at Certificate III Level or Above, by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009.

**8/4/2010** - Additional Information. These data cubes are the fifth and sixth in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. The fifth cube provides data in Excel spreadsheets for persons with attainment at Certificate II level or above, by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009. The sixth cube provides data in Excel spreadsheets for persons who have attained a non-school qualification, by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009.

**1/4/2010** - Additional Information. This data cube is the fourth in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. It provides data in Excel spreadsheets for persons aged 15–64 who are fully engaged in education or training and/or work, by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009.

**25/3/2010** - Additional Information. This data cube is the third in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. It provides data in Excel spreadsheets for persons aged 15–24 who are fully engaged in education or training and/or work, by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009.

**18/03/2010** - Additional Information. This data cube is the second in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. It provides data in Excel spreadsheets for persons who have attained a qualification at Certificate III Level or Above, by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009.

**16/12/2009** - Reissue. There was an error in Tables 18 and 19 of the publication and data cube for **Survey of Education and Work** (cat. no. 6227.0) which was released on 24 November 2009. The publication and data cubes have been updated and reissued.

## Explanatory Notes

# Explanatory Notes

## EXPLANATORY NOTES

### INTRODUCTION

**1** The statistics in this publication were compiled from data collected in the Survey of Education and Work (SEW) that was conducted throughout Australia in May 2009 as a supplement to the monthly Labour Force Survey (LFS). Respondents to the LFS who were in scope of the supplementary survey were asked further questions.

**2** The SEW provides a range of key indicators of educational participation and attainment of persons aged 15-74 years, along with data on people's transition between education and work. The annual time series allows for ongoing monitoring, and provides a link with the more detailed range of educational indicators available from the four-yearly Survey of Education and Training. Specifically, the supplementary survey provides information on: people presently participating in education; level of highest non-school qualification; level of highest educational attainment; characteristics of people's transition between education and work; and data on apprentices.

**3** The publication **Labour Force, Australia (cat. no. 6202.0)** contains information about survey design, sample redesign, scope, coverage and population benchmarks relevant to the LFS, which also apply to supplementary surveys. It also contains definitions of demographic and labour force characteristics, and information about telephone interviewing relevant to both the LFS and supplementary surveys. For more details on recent changes to the LFS see **Information Paper: Labour Force Sample Design, Nov 2007 (cat. no. 6269.0)**.

### CONCEPTS SOURCES AND METHODS

**4** The conceptual framework used in Australia's LFS aligns closely with the standards and guidelines set out in Resolutions of the International Conference of Labour Statisticians. Descriptions of the underlying concepts and structure of Australia's labour force statistics, and the sources and methods used in compiling these estimates, are presented in **Labour Statistics: Concepts, Sources and Methods, April 2007 (cat. no. 6102.0.55.001)** which is available on the ABS website <https://www.abs.gov.au>.

### SCOPE

**5** The scope of the SEW was restricted to persons aged 15-74 years and excluded the following persons:

- members of the permanent defence forces;
- certain diplomatic personnel of overseas governments, customarily excluded from the Census and estimated resident population figures;
- overseas residents in Australia;
- members of non-Australian defence forces (and their dependants) stationed in Australia;
- persons who are permanently unable to work;
- persons aged 65-74 years who are permanently not intending to work, or not in the labour force, or not marginally attached to the labour force;

- special dwelling type institutionalised persons (e.g. patients in hospitals, residents of retirement homes, residents of homes for persons with disabilities, inmates of prisons); and
- special dwelling type boarding school pupils.

**6** Boarding school pupils have been excluded from the scope of the SEW since 2005, but were included in earlier collections. The LFS in May 2009 yielded an estimate of 19,200 boarding school pupils aged 15 years and over, who were excluded from the SEW.

**7** In 2009, persons aged 65-74 years who were in the labour force, or were marginally attached to the labour force, were interviewed for the first time for SEW. In May 2009 there were an estimated 270,400 persons aged 65-74 years in the labour force or marginally attached to the labour force, out of a total 1,464,800 persons aged 65-74 years. Persons are determined to be marginally attached to the labour force if they were not in the labour force in the reference week, wanted to work and:

- were actively looking for work but did not meet the availability criteria to be classified as unemployed; or
- were not actively looking for work but were available to start work within four weeks or could start work within four weeks if child care was available.

**8** This supplementary survey was conducted in both urban and rural areas in all states and territories, but excluded people living in Indigenous communities in very remote parts of Australia. In 2009, persons who live in very remote areas that are not part of the Indigenous Community Frame (ICF) were interviewed for the first time for SEW. Approximately 0.5% (76,700) of persons in scope of SEW in 2009 live in very remote areas that are not part of the ICF.

## COVERAGE

**9** The estimates in this publication relate to persons covered by the survey in May 2009. In the LFS, coverage rules are applied which aim to ensure that each person is associated with only one dwelling and hence has only one chance of selection in the survey. See **Labour Force, Australia (cat. no. 6202.0)** for more details.

## SAMPLE SIZE

**10** Approximately 96% of the selected households were fully responding to the SEW, which resulted in a total of 30,440 completed interviews. The LFS sample size in May 2009 was approximately 20% smaller than the sample size in May 2008 and approximately one-third smaller than in May 2007. This is due to an 11% sample reduction that was implemented from November 2007 to June 2008 based on the 2006 sample design following the **2006 Census of Population and Housing**, and an additional 24% sample reduction implemented in July 2008. The reduced sample will still be representative, with selections made across all parts of Australia. The smaller sample size has resulted in the relative standard errors (RSEs) for 2009 SEW estimates increasing by approximately 11% on average from the 2008 SEW estimates and approximately 22% from the 2007 SEW estimates. The Northern Territory estimates are an exception because the sample size has increased in the Northern Territory, and therefore the RSEs have decreased. For more information see **Information Paper: Labour Force Sample Design, Nov 2007 (cat. no. 6269.0)**.

## RELIABILITY OF THE ESTIMATES

**11** Estimates in this publication are subject to sampling and non-sampling errors:

- Sampling error is the difference between the published estimate and the value that would have been produced if all dwellings had been included in the survey. For more details see the Technical Note.
- Non-sampling errors are inaccuracies that occur because of imperfections in reporting by respondents and interviewers, and errors made in coding and processing data. These inaccuracies may occur in any enumeration, whether it be a full count or a sample. Every effort is made to reduce the non-sampling error to a minimum by careful design of questionnaires, intensive training and supervision of interviewers, and efficient processing procedures.

## SEASONAL FACTORS

**12** The estimates are based on information collected in the survey month, and due to seasonal factors they may not be representative of other months of the year.

## CLASSIFICATIONS

### COUNTRY OF BIRTH

**13** Country of birth data are classified according to the **Standard Australian Classification of Countries (SACC) 1998 (Revision 2.03) (cat. no. 1269.0)**. Revision 2.03 amends the **Standard Australian Classification of Countries, 1998 (cat. no. 1269.0)** according to the creation of the independent republics of Montenegro and Serbia; updates to International Organization for Standardization (ISO) and UN classification codes; and valid output code options for some supplementary codes. These revisions have been effective since January 2007.

### INDUSTRY

**14** Industry data are classified according to the **Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (cat. no. 1292.0)**.

### OCCUPATION

**15** Occupation data are classified according to the **Australia and New Zealand Standard Classifications of Occupations (ANZSCO), First Edition, 2006 (cat.no. 1220.0)**.

### EDUCATION

**16** Education data are coded to the **Australian Standard Classification of Education, 2001 (cat. no. 1272.0)**. The ASCED is a national standard classification which can be applied to all sectors of the Australian education system including schools, vocational education and training and higher education. The ASCED comprises two classifications:



Level of Education and Field of Education.

**17** Level of Education is defined as a function of the quality and quantity of learning involved in an educational activity. There are nine broad levels, 15 narrow levels and 64 detailed levels. For definitions of these levels see the **Australian Standard Classification of Education, 2001 (cat. no. 1272.0)**.

**18** Field of Education is defined as the subject matter of an educational activity. Fields of education are related to each other through the similarity of subject matter, through the broad purpose for which the education is undertaken, and through the theoretical content which underpins the subject matter. There are 12 broad fields, 71 narrow fields and 356 detailed fields. For definitions of these fields see the **Australian Standard Classification of Education, 2001 (cat. no. 1272.0)**.

## **LEVEL OF HIGHEST EDUCATIONAL ATTAINMENT**

**19** Level of highest educational attainment was derived from information on highest year of school completed and level of highest non-school qualification. The derivation process determines which of the 'non-school' or 'school' attainments will be regarded as the highest. Usually the higher ranking attainment is self-evident, but in some cases some secondary education is regarded, for the purposes of obtaining a single measure, as higher than some certificate level attainments.

**20** The following decision table is used to determine which of the responses to questions on highest year of school completed (coded to ASCED Broad Level 6) and level of highest non-school qualification (coded to ASCED Broad Level 5) is regarded as the highest. It is emphasised that this table was designed for the purpose of obtaining a single value for level of highest educational attainment and is not intended to convey any other ordinality.

| <b>Decision Table: Level of Highest Educational Attainment ( ASCED level of education codes)</b> |   |                                    |                      |                       |                                  |                         |                         |
|--|---|------------------------------------|----------------------|-----------------------|----------------------------------|-------------------------|-------------------------|
| Highest year of school completed   | Level of highest non-school qualification |                                    |                      |                       |                                  |                         |                         |
|  | Certificate n.f.d. (500)                  | Certificate III or IV n.f.d. (510) | Certificate IV (511) | Certificate III (514) | Certificate I or II n.f.d. (520) | Certificate II (521)    | Certificate I (524)     |
| Secondary Education n.f.d. (600)   | Certificate n.f.d.                        | Certificate III or IV n.f.d.       | Certificate IV       | Certificate III       | Certificate I or II n.f.d.       | Certificate II          | Certificate I           |
| Senior Secondary Education n.f.d. (510)  | Senior Secondary n.f.d.                   | Certificate III or IV n.f.d.       | Certificate IV       | Certificate III       | Senior Secondary n.f.d.          | Senior Secondary n.f.d. | Senior Secondary n.f.d. |
| Year 12 (511)  | Year 12                                   | Certificate III or IV n.f.d.       | Certificate IV       | Certificate III       | Year 12                          | Year 12                 | Year 12                 |
| Year 11 (513)  | Year 11                                   | Certificate III or IV n.f.d.       | Certificate IV       | Certificate III       | Year 11                          | Year 11                 | Year 11                 |
| Junior Secondary Education n.f.d. (620)  | Certificate n.f.d.                        | Certificate III or IV n.f.d.       | Certificate IV       | Certificate III       | Certificate I or II n.f.d.       | Certificate II          | Certificate I           |
| Year 10 (521)  | Year 10                                   | Certificate III or IV n.f.d.       | Certificate IV       | Certificate III       | Year 10                          | Certificate II          | Year 10                 |
| Year 9 (522)   | Certificate n.f.d.                        | Certificate III or IV n.f.d.       | Certificate IV       | Certificate III       | Certificate I or II n.f.d.       | Certificate II          | Certificate I           |
| Year 8 (523)   | Certificate n.f.d.                        | Certificate III or IV n.f.d.       | Certificate IV       | Certificate III       | Certificate I or II n.f.d.       | Certificate II          | Certificate I           |
| Year 7 (524)   | Certificate n.f.d.                        | Certificate III or IV n.f.d.       | Certificate IV       | Certificate III       | Certificate I or II n.f.d.       | Certificate II          | Certificate I           |

**21** The decision table is also used to rank the information provided in a survey about the qualifications and attainments of a single individual. It does not represent any basis for comparison between differing qualifications. For example, a person whose highest year of school completed was Year 12, and whose level of highest non-school qualification was a Certificate III, would have those responses crosschecked on the decision table and would as a result have their level of highest educational attainment output as Certificate III. However, if the same person answered 'certificate' to the highest non-school qualification question, without any further detail, it would be crosschecked against Year 12 on the decision table as Certificate not further defined. The output would then be Year 12. The decision table, therefore, does not necessarily imply that one qualification is 'higher' than the other. For more details, see **Education Variables, 2002 (cat. no. 1246.0)**.

## LEVEL OF EDUCATION OF CURRENT STUDY

**22** Level of education of current study is derived using the decision table displayed above, taking into account Level of education of school study in current year and Level of education of non-school study in current year for persons who are undertaking concurrent qualifications.

## COMPARABILITY OF TIME SERIES

**23** Supplementary surveys are not always conducted on the full LFS sample. Since August 1994 the sample for supplementary surveys has been restricted to no more than seven-eighths of the LFS sample. Since it was introduced, this survey has been conducted on various proportional samples and therefore sampling errors associated with previous

supplementary surveys may vary from the sampling error for this survey.

**24** Since 2005, boarding school pupils have been excluded from the scope of the SEW, but were included in earlier collections. For more details, see paragraph 6 of the Explanatory Notes.

**25** Since 2007, industry data in the SEW are classified according to the **Australian and New Zealand Standard Industrial Classification, 2006 (cat. no. 1292.0)**. Industry data prior to this were classified according to the **Australian and New Zealand Standard Industrial Classification, 1993 (cat. no. 1292.0)**. Therefore, industry data from SEWs prior to 2007 are not directly comparable to 2009 industry data.

**26** Since 2007, occupation data in the SEW are classified according to the **Australia and New Zealand Standard Classifications of Occupations, First Edition, 2006 (cat.no. 1220.0)**. Occupation data prior to this were classified according to the **Australia Standard Classifications of Occupations, Second Edition, 1997 (cat.no. 1220.0)**. Therefore, occupation data from SEWs prior to 2007 are not directly comparable to 2009 occupation data.

**27** In previous years, only persons aged 15-54 years were included in the apprenticeship/traineeship survey questions. In 2008, the age scope was extended to include persons aged 55-64 years for these questions. In 2009, the age scope was further extended to include persons aged 65-74 years for these questions. In 2008, the definition for apprentices and trainees changed from those employed as apprentices/trainees to include only those with a formal contract under the **Australian Apprenticeship Scheme**. Therefore data on apprentices from previous years are not directly comparable to 2008 and subsequent data. Note that **Australian School-based Apprenticeships** are excluded.

**28** Revisions are made to population benchmarks for the LFS after each five-yearly Census of Population and Housing. The last such revision was made in February 2009 to take account of the results of the **2006 Census of Population and Housing**. Estimates from supplementary surveys conducted from and including 2009 are therefore based on these 2006 population benchmarks.

## COMPARISON WITH OTHER ABS SOURCES

**29** Since the SEW is conducted as a supplement to the LFS, data items collected in the LFS are also available. However, there are some important differences between the two surveys. The SEW sample is a subset of the LFS sample (see Paragraph 1 of these Explanatory Notes) and the SEW had a response rate of 96% which is lower than the LFS response rate for the same period of 97%. Due to these differences between the samples, the SEW data are weighted as a separate process to the weighting of LFS data. Differences may therefore be found in the estimates collected in the LFS and published as part of the SEW, when compared with estimates published in the May 2009 issue of **Labour Force, Australia (cat. no. 6202.0)**.

**30** Additionally, estimates from the SEW may differ from the estimates produced from other ABS collections, for several reasons. The SEW is a sample survey and its results are subject to sampling error. Results may differ from other sample surveys, which are also subject to sampling error. Users should take account of the RSEs on estimates and those of other survey estimates where comparisons are made.

**31** Differences may also exist in the scope and/or coverage of the SEW compared to other surveys. Differences in estimates, when compared to the estimates of other surveys, may

result from different reference periods reflecting seasonal variations, non-seasonal events that may have impacted on one period but not another, or because of underlying trends in the phenomena being measured.

**32** Finally, differences can occur as a result of using different collection methodologies. This is often evident in comparisons of similar data items reported from different ABS collections where, after taking account of definition and scope differences and sampling error, residual differences remain. These differences are often the result of the mode of the collections, such as whether data are collected by an interviewer or self-enumerated by the respondent, whether the data are collected from the person themselves or from a proxy respondent, and the level of experience of the interviewers. Differences may also result from the context in which questions are asked, i.e. where in the interview the questions are asked and the nature of preceding questions. The impacts on data of different collection methodologies are difficult to quantify. As a result, every effort is made to minimise such differences.

**33** The following table, **Comparison of Data from SEW to Other ABS Sources**, presents comparisons between a number of key SEW data items and similar data items from other ABS sources. These sources include data collected in the LFS, which were reported in the May 2009 issue of **Labour Force, Australia (cat. no. 6202.0)** and data collected from the Adult Literacy and Life Skills Survey (ALLS), which were reported in the Adult Literacy and Life Skills Survey, Summary Results, Australia 2006 (cat. no. 4228.0). The comparison shows SEW data are broadly consistent with these ABS sources.

**Comparison of Data from SEW to other ABS sources**

|   | Other ABS sources<br>% | SEW - May 2009<br>% |
|---|------------------------|---------------------|
| LFS-MAY 2009(a)   |                        |                     |
| Labour force status                                       |                        |                     |
| Employed  | 72.0                   | 74.1                |
| Employed full-time  | 51.2                   | 52.7                |
| Employed part-time  | 20.9                   | 21.4                |
| Unemployed  | 4.6                    | 4.7                 |
| Not in the labour force                                   | 23.4                   | 21.2                |
| Country of birth  |                        |                     |
| Born in Australia   | 71.4                   | 71.4                |
| Born overseas   | 28.6                   | 28.6                |
| ALLS-2006(a)  |                        |                     |
| Highest year of school completed                          |                        |                     |
| Year 12   | 49.7                   | 54.7                |
| Year 11   | 11.6                   | 11.4                |
| Year 10   | 24.5                   | 23.8                |
| Year 9  | 7.8                    | 6.4                 |
| Year 8 or below   | 6.3                    | 3.4                 |
| Never attended school                                     | 0.1                    | 0.1                 |
| Level of highest non-school qualification                 |                        |                     |
| Postgraduate Degree/Graduate Diploma/Graduate Certificate | 6.4                    | 6.6                 |
| Bachelor Degree   | 14.6                   | 16.4                |
| Advanced Diploma/Diploma                                  | 8.8                    | 8.7                 |
| Certificate III/IV  | 16.4                   | 16.1                |
| Certificate I/II  | 7.4                    | 4.5                 |
| Certificate n.f.d.  | 1.6                    | 1.4                 |
| Level not determined                                      | 1.1                    | 1.1                 |
| No educational attainment                                 | 43.8                   | 45.0                |

(a) Data restricted to persons aged 15-64 years to align with SEW.

## CONFIDENTIALISED UNIT RECORD FILE

**34** Confidentialised unit record files (CURF) release confidentialised microdata from surveys, thereby facilitating interrogation and analysis of data. For the **Education and Work** survey, a basic CURF is released every two years and will be released for the 2009 survey. The **Education and Work** CURF was last released in 2007. For more details, refer to the 2007 SEW CURF, **Technical Manual: Survey of Education and Work, Australia - Confidentialised Unit Record File, May 2007 (cat. no. 6227.0.30.002).**

## PREVIOUS SURVEYS

**35** Results of similar surveys have been published in previous issues. These surveys were conducted annually from February 1964 to February 1974, in May 1975 and 1976, in August 1977 and 1978, and annually in May since 1979. Results of previous surveys were published in **Transition from Education to Work, Australia (cat. no. 6227.0)** from 1964 to 2001. Since May 2002, the results of the survey have been published in **Education and Work, Australia (cat. no. 6227.0)**.

## NEXT SURVEY

**36** The ABS intends to conduct this survey again in May 2010.

## ACKNOWLEDGMENT

**37** ABS publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated; without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the **Census and Statistics Act 1905**.

## RELATED PUBLICATIONS

**38** Other publications which may be of interest include:

- **A Directory of Education and Training Statistics (cat. no. 1136.0)** - issued irregularly, last issued in March 2009
- **Adult Learning (cat. no. 4229.0)** - issued irregularly, first issue 2006-2007, released in December 2007
- **Adult Literacy and Life Skills Survey, Summary Results, Australia (cat. no. 4228.0)** - issued irregularly, last issue 2006 released in 2008
- **Education and Training Experience, Australia (cat. no. 6278.0)** - issued four-yearly, last issue 2005 released in May 2006
- **Education and Training Indicators, Australia (cat. no. 4230.0)** - issued irregularly, first issue released in December 2002
- **Information Paper: Measuring Learning in Australia, Dictionary of Standards for Education and Training Statistics (cat. no. 4232.0.55.001)** - issued irregularly, last issue released in October 2004
- **Information Paper: Measuring Learning in Australia, Framework for Education and Training Statistics (cat. no. 4213.0)** - released on a single issue basis in January 2003
- **Information Paper: Measuring Learning in Australia, Plan to Improve the Quality,**

**Coverage and Use of Education and Training Statistics (cat. no. 4231.0)** - issued irregularly, first issue released in September 2004

- **Labour Force, Australia (cat. no. 6202.0)** - issued monthly
- **Schools, Australia (cat. no. 4221.0)** - issued annually, last issued in March 2009

**39** Current publications and other products released by the ABS are available from the ABS website <<https://www.abs.gov.au>>. The ABS also issues a daily upcoming release advice on the website that details products to be released in the week ahead. The National Centre for Education and Training theme page also contains a wealth of information and useful references. This site can also be accessed through the ABS website.

## Bibliography

### BIBLIOGRAPHY

Australian Bureau of Statistics (ABS) 2008, **Education and Work, 2008**, cat. no. 6227.0, Canberra.

## Glossary

### GLOSSARY

#### Apprentice

An apprentice is a person aged 15-64 years who has entered into a legal contract (called a training agreement or contract of training) with an employer, to serve a period of training for the purpose of attaining tradesperson status in a recognised trade. In this survey, apprentices are identified by their answer to a question specifically pertaining to the *Australian Apprenticeship Scheme*. Note that *Australian School-based Apprenticeships* are excluded.

#### Australian Standard Classification of Education (ASCED)

The ASCED is a national standard classification which includes all sectors of the Australian education system: that is, schools, vocational education and training, and higher education. From 2001, ASCED replaced a number of classifications used in administrative and statistical systems, including the ABSCQ. The ASCED comprises two classifications: Level of education and Field of education. See **Australian Standard Classification of Education, 2001 (cat. no. 1272.0)**.

#### Certificate not further defined

Survey responses are coded to Certificate not further defined (n.f.d.) when there is not enough information to code them to Certificate I, II, III or IV in the **Australian Standard Classification of Education, 2001 (cat. no. 1272.0)**, Level of education classification.

## **Country of birth**

Country of birth has been classified according to the **Standard Australian Classification of Countries (SACC), 1998 (Revision 2.03) (cat. no. 1269.0).**

## **Educational institution**

Any institution whose primary role is education. Included are schools, higher education establishments, colleges of technical and further education, public and private colleges, etc. Excluded are institutions whose primary role is not education.

## **Employed**

Persons who, during the reference week:

- worked for one hour or more for pay, profit, commission or payment in kind in a job or business, or on a farm (comprising employees, employers and own account workers); or
- worked for one hour or more without pay in a family business or on a farm (i.e. contributing family workers); or
- were employees who had a job but were not at work and were:
  - away from work for less than four weeks up to the end of the reference week; or
  - away from work for more than four weeks up to the end of the reference week and received pay for some or all of the four week period to the end of the reference week; or
  - away from work as a standard work or shift arrangement; or
  - on strike or locked out; or
  - on workers' compensation and expected to return to their job; or
- were employers or own account workers who had a job, business or farm, but were not at work.

## **Employed full-time**

Employed persons who usually worked 35 hours or more a week (in all jobs) and those who, although usually working less than 35 hours a week, worked 35 hours or more during the reference week.

## **Employed part-time**

Employed persons who usually worked less than 35 hours a week (in all jobs) and either did so during the reference week, or were not at work in the reference week.

## **Enrolled**

Refers to persons registered for a course of study in the particular reference period (e.g. survey month, or previous calendar year) at an educational institution (as defined).

## **Field not determined**

Field not determined includes inadequately described responses or where no responses were given.

## **Field of education**

Field of education is defined as the subject matter of an educational activity. It is categorised according to the **Australian Standard Classification of Education, 2001 (cat. no. 1272.0)** Field of education classification. This publication presents the main field of education studied.

### **Field of trade**

Refers to the occupation of an apprentice and is classified according to the **Australian and New Zealand Standard Classification of Occupations (ANZSCO), First Edition, 2006 (cat. no. 1220.0)** Unit Group.

### **Higher education institution**

An Australian institution providing higher education courses, e.g. universities; colleges of advanced education; institutes of advanced education; institutes of higher education; institutes of tertiary education; agricultural colleges and some institutes of technology.

### **Industry**

Industry data is classified according to the **Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (cat. no. 1292.0)**.

### **Leavers**

Persons who were enrolled in a course of study for a qualification in the previous year, but were not enrolled in any course of study for a qualification at the time of the survey.

### **Level of education**

Level of education is a function of the quality and quantity of learning involved in an educational activity. It is categorised according to the **Australian Standard Classification of Education, 2001 (cat. no. 1272.0)** Level of education classification.

### **Level of highest educational attainment**

Level of highest educational attainment identifies the highest achievement a person has attained in any area of study. It is not a measurement of the relative importance of different fields of study but a ranking of qualifications and other educational attainments regardless of the particular area of study or the type of institution in which the study was undertaken. See paragraphs 20-22 of the Explanatory Notes for how highest level is derived.

### **Level not determined**

Level not determined includes inadequately described responses or where no responses were given.

### **Marginal attachment to the labour force**

People who were not in the labour force in the reference week, wanted to work and:

- were actively looking for work but did not meet the availability criteria to be classified as unemployed; or
- were not actively looking for work but were available to start work within four weeks.



The criteria for determining those in the labour force are based on activity (i.e. working or looking for work) and availability to start work during the reference week. The criteria associated with marginal attachment to the labour force, in particular the concepts of wanting to work and reasons for not actively looking for work, are more subjective. Hence, the measurement against these criteria is affected by the respondent's own interpretation of the concepts used. An individual respondent's interpretation may be affected by their work aspirations, as well as family, economic and other commitments.

### **Non-school educational institution**

An educational institution, other than a secondary school. This includes higher education establishments, colleges of technical and further education, public and private colleges, etc. Institutions excluded are those whose primary role is not education.

### **Non-school qualification**

Non-school qualifications are awarded for educational attainments other than those of pre-primary, primary or secondary education. They include qualifications at the Postgraduate Degree level, Master Degree level, Graduate Diploma and Graduate Certificate level, Bachelor Degree level, Advanced Diploma and Diploma level, and Certificates I, II, III and IV levels. Non-school qualifications may be attained concurrently with school qualifications.

### **Not in labour force**

Persons who were not in the categories 'employed' or 'unemployed' (as defined).

### **Occupation**

Occupation data is classified according to the **Australian Standard Classification of Occupations, First Edition, 2006 (cat. no. 1220.0)**.

### **Other educational institution**

Includes institutions or establishments that offer educational courses such as industry skills centres, professional or industry associations, equipment/product manufacturers or suppliers, and instances where insufficient information was available to determine the type of educational institution.

### **Qualification**

Formal certification, issued by a relevant approved body, in recognition that a person has achieved an appropriate level of learning outcomes or competencies relevant to identified individual, professional, industry or community needs. Statements of attainment awarded for partial completion of a course of study at a particular level are excluded.

### **Reference week**

The week preceding the week in which the interview was conducted.

### **School**

An educational institution whose major activity is the provision of formal classes of primary or secondary education, or the provision of primary or secondary distance education.

## **School leavers**

Persons aged 15-24 years who attended school in 2008 but were not attending school prior to the survey date in May 2009.

## **Study for a qualification**

The reported level of education of any study being undertaken that will lead to formal certification, issued by a relevant approved body, in recognition that a person has achieved learning outcomes or competencies relevant to identified individual, professional, industry or community needs. In this survey, if the respondent was still attending school their level of study was recorded as their current year of schooling. If the respondent had left school and was enrolled in study for a qualification they were asked the level of the qualification.

## **TAFE**

A Technical and Further Education institution. In Victoria this may also be interpreted as Training and Further Education.

## **Unemployed**

Persons aged 15-64 years who were not employed during the reference week, and:

- had actively looked for full-time or part-time work at any time in the four weeks up to the end of the reference week and were available for work in the reference week; or
- were waiting to start a new job within four weeks from the end of the reference week and could have started in the reference week if the job had been available then.

# **Abbreviations**

## **ABBREVIATIONS**

The following symbols and abbreviations are used in this publication:

|        |   |
|--------|---|
| ABS    | Australian Bureau of Statistics                                   |
| ABSCQ  | Australian Bureau of Statistics Classification of Qualifications  |
| ALLS   | Adult Literacy and Life Skills Survey                             |
| ANZSCO | Australian and New Zealand Standard Classification of Occupations |
| ANZSIC | Australian and New Zealand Standard Industrial Classification     |
| ASCED  | Australian Standard Classification of Education                   |
| CURF   | confidentialised unit record file                                 |
| ICF    | Indigenous Community Frame  |
| ISO    | International Organization for Standardization                    |
| LFS    | Labour Force Survey   |
| n.f.d. | not further defined   |
| RSE    | relative standard error   |
| SACC   | Standard Australian Classification of Countries                   |
| SE     | standard error  |
| SEW    | Survey of Education and Work                                      |
| TAFE   | Technical and Further Education                                   |

## Supplementary surveys (Appendix)

### APPENDIX SUPPLEMENTARY SURVEYS

#### SUPPLEMENTARY SURVEYS

The Monthly Population Survey program collects data on particular aspects of the labour force. The following is an historical list of supplementary surveys to the monthly labour force survey. Data are available from the ABS website <https://www.abs.gov.au>. Additional data from these surveys is available on request and can be obtained by contacting the ABS.

#### A1 MONTHLY POPULATION SURVEY PROGRAM, Supplementary surveys to the LFS

|  | cat. no.      | Frequency | Latest issue   |
|--|---------------|-----------|----------------|
| Child Care, Australia  | 4402.0        | Irregular | June 2008      |
| Children's Participation in Cultural and Leisure Activities, Australia | 4901.0        | Irregular | April 2009     |
| Education and Work, Australia  | 6227.0        | Annual    | May 2009       |
| Employee Earnings, Benefits, and Trade Union Membership, Australia     | 6310.0        | Annual    | August 2008    |
| Environmental Issues: Energy Use and Conservation                      | 4602.0.55.001 | Irregular | March 2008     |
| Environmental Issues: Waste Management and Transport Use               | 4602.0.55.002 | Irregular | March 2009     |
| Forms of Employment, Australia   | 6359.0        | Irregular | November 2008  |
| Job Search Experience, Australia                                       | 6222.0        | Annual    | July 2008      |
| Labour Force Experience, Australia                                     | 6206.0        | Biennial  | February 2009  |
| Labour Force Status and Other Characteristics of Migrants, Australia   | 6250.0        | Irregular | November 2007  |
| Labour Mobility, Australia   | 6209.0        | Biennial  | February 2008  |
| Persons Not in the Labour Force, Australia                             | 6220.0        | Annual    | September 2008 |
| Underemployed Workers, Australia                                       | 6265.0        | Annual    | September 2008 |

## Quality Declaration - Summary

### QUALITY DECLARATION - SUMMARY

#### INSTITUTIONAL ENVIRONMENT

For information on the institutional environment of the Australian Bureau of Statistics (ABS), including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment.

#### RELEVANCE

The Education and Work survey provides annual information about a range of key indicators relating to the educational participation and attainment along with data on people's transition between education and work for all persons aged 15 to 64 years and persons aged 65 to 74 who are employed or marginally attached to the labour force.

As a result of this survey being supplementary to the LFS, persons excluded from the LFS were also excluded from this survey (see Explanatory Notes of Labour Force, Australia (cat. no. 6202.0) for standard LFS exclusions). Additional exclusions from this survey were persons aged 75 or older, persons aged 65-74 years who are not intending to work, persons permanently unable to work, institutionalised persons, boarding school pupils. Very remote areas have been included for the first time in 2009. Very remote areas represent about 2% of the population.

The type of information collected included: participation in education in the year prior to the survey, and in the survey month; labour force characteristics; type of educational institution; level of education of current and previous study; highest year of school completed; level and main field of highest non-school qualification; transition from education to work; unmet demand for education; and selected characteristics of apprentices.

The Australian Classification of Education (ASCED) (cat. no. 1272.0) was used to classify education. The ASCED is a national standard classification which can be applied to all sectors of the Australian education system including schools, vocational education and training and higher education. The ASCED comprises two classifications: Level of Education and Field of Education.

## **TIMELINESS**

The most recent Education and Work survey was conducted throughout Australia in May 2009 as a supplement to the monthly Labour Force Survey (LFS). The ABS has been conducting similar surveys since 1964. These surveys were conducted annually from February 1964 to February 1974, in May 1975 and 1976, in August 1977 and 1978 and annually in May since 1979. Data from the survey are released approximately six months after they have been collected.

## **ACCURACY**

The number of completed interviews (after taking into account scope and coverage exclusions) was 30,440. This sample was achieved by obtaining a response rate of 96% from about 22,800 private dwellings and a list of non-private dwellings.

The Labour Force Survey is designed to primarily provide estimates for the whole of Australia and, secondly, for each state and territory.

Two types of error are possible in an estimate based on a sample survey: non-sampling error and sampling error.

Non-sampling error arises from inaccuracies in collecting, recording and processing the data. Every effort is made to minimise reporting error by the careful design of questionnaires, intensive training and supervision of interviewers, and efficient data processing procedures. Non-sampling error arises because information cannot be obtained from all persons selected in the survey.

Sampling error occurs because a sample, rather than the entire population is surveyed. One measure of the likely difference resulting from not including all dwellings in the survey is given by the standard error. There are about two chances in three that a sample estimate will differ by less than one standard error from the figure that would have been obtained if all dwellings had been included in the survey and about nineteen chances in twenty that the difference will be less than two standard errors.

Every 5 years, following the availability of data from the Census of Population and Housing, the ABS reviews the LFS sample design. As a result of the review following the 2006 Census, the new sample design, implemented over the period November 2007 to June 2008, resulted in a smaller sample size from July 2008. An additional 24% sample reduction was implemented in July 2008. As a result of the smaller sample size, standard errors for estimates from the 2009 Survey of Education and Work have increased slightly. For more information see Information Paper: Labour Force Sample Design, Nov 2007 (cat. no. 6269.0).

## **COHERENCE**

The ABS seeks to maximise consistency and comparability over time by minimising changes to the survey; sound survey practice requires ongoing development to maintain the integrity of the data. Minor changes were made to the survey between 2008 and 2009 to enhance the quality of the data and to reflect any changes in the education or other relevant system.

In 2009 the scope of the survey was extended to include persons aged 65 to 74 years who are employed or marginally attached to the labour force. Persons are determined to be marginally attached to the labour force if they were not in the labour force in the reference week, wanted to work and: were actively looking for work but did not meet the availability criteria to be classified as unemployed; or were not actively looking for work but were available to start work within four weeks or could start work within four weeks if child care was available. To maintain comparability between years, the extra persons were not included in most of the tables. A separate table has been included.

## **INTERPRETABILITY**

Detailed information on the terminology, classifications and other technical aspects associated with the Survey of Education and Work can be found in the pdf release as well as the relevant web pages included with this release.

## **ACCESSIBILITY**

In addition to the pdf publication, the tables and associated RSEs are available in spreadsheet format on the website. Extra tables not contained in the pdf are also included on the website.

A Confidentialised Unit Record File (CURF) containing confidentialised microdata from the Survey of Education and Work has been released biennially since 2001. The CURF facilitates interrogation and analysis of survey data. The 2009 Survey of Education and Work CURF will be released early in 2010. For further details refer to the ABS website [≤https://www.abs.gov.au>](https://www.abs.gov.au).

Data are also available on request. Note that detailed data can be subject to high relative standard errors which in some cases may result in data being confidentialised.

For further information about these or related statistics, contact the National Information and Referral Service on 1300 135 070.

## Data Cubes (I-Note) - Data Cubes

### REASON FOR REISSUE OF DATA CUBE

There was an error in Tables 18 and 19 of the data cube for **Survey of Education and Work** (cat. no. 6227.0) which was released on 24 November 2009. The tables have now been updated and the following is a summary of the changes made:

- Persons enrolled in current study not for a qualification were incorrectly included with persons enrolled for a qualification. Persons enrolled in current study not for a qualification are now included in 'Not enrolled'.

## Publication (I-Note) - Publication

### REASON FOR REISSUE OF PUBLICATION

There was an error in Tables 18 and 19 of the publication and data cubes for **Survey of Education and Work** (cat. no. 6227.0) which was released on 24 November 2009. The publication and data cubes have now been updated and the following is a summary of the changes made:

- Persons enrolled in current study not for a qualification were incorrectly included with persons enrolled for a qualification. Persons enrolled in current study not for a qualification are now included in 'Not enrolled'.

## Data Cubes (I-Note) - Data Cubes

This data cube **Persons who have completed Year 12 (or equivalent) or attained at Certificate II level or above** was reissued on 16 December 2009 to correct an error in the Relative Standard Errors of Total provided for 2009 and one proportion of persons for 2008. Other parts of the data cube are not affected.

This data cube, initially released on 24 November 2009, is the first in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. It provides data in Excel spreadsheets for persons who have completed Year 12 (or equivalent) or attained at Certificate II Level or Above, by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009.

## Data Cubes (I-Note) - Data Cubes

This data cube **Persons who have attained a qualification at Certificate III Level or Above** was reissued on 15 April 2010 to correct a minor error in the comment for the 95% Confidence Interval provided for 2001. Other parts of the data cube are not affected.

This data cube, initially released on 18 March 2010, is the second in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. It provides data in Excel spreadsheets for persons who have attained a qualification at Certificate III Level or Above, by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009.

## Data Cubes (I-Note) - Data Cubes

**This document was added or updated on 25/03/2010.**

This data cube is the third in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. It provides data in Excel spreadsheets for persons aged 15–24 who are fully engaged in education or training and/or work, by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009.

## Data Cubes (I-Note) - Data Cubes

This data cube is the fourth in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. It provides data in Excel spreadsheets for persons aged 15–64 who are fully engaged in education or training and/or work, by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009.

## Data Cubes (I-Note) - Data Cubes

This data cube is the fifth in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. This cube provides data in Excel spreadsheets for persons with attainment at Certificate II level or above, by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009

## Data Cubes (I-Note) - Data Cubes

This data cube is the sixth in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. This cube provides data in Excel spreadsheets for persons who have attained a non-school qualification, by State/Territory of

Residence, Sex and Age group. Includes data for 2001-2009.

## Data Cubes (I-Note) - Data Cubes

This data cube is the seventh in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. This cube provides data in Excel spreadsheets for persons participating in post school education or training at Certificate III level or above, by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009.

## Data Cubes (I-Note) - Data Cubes

This data cube is the eighth in a series which focus on specific aspects of education and training data, from the Survey of Education and Work. This cube provides data in Excel spreadsheets for persons enrolled at educational institutions (all study), by State/Territory of Residence, Sex and Age group. Includes data for 2001-2009.

## Data quality (Technical Note)

### TECHNICAL NOTE DATA QUALITY

#### RELIABILITY OF THE ESTIMATES

**1** Since the estimates in this publication are based on information obtained from occupants of a sample of dwellings, they are subject to sampling variability. That is, they may differ from those estimates that would have been produced if all dwellings had been included in the survey. One measure of the likely difference is given by the standard error (SE), which indicates the extent to which an estimate may have varied by chance because only a sample of dwellings was included. There are about two chances in three (67%) that a sample estimate will differ by less than one SE from the number that would have been obtained if all dwellings had been included, and about 19 chances in 20 (95%) that the difference will be less than two SEs.

**2** Another measure of the likely difference is the relative standard error (RSE), which is obtained by expressing the SE as a percentage of the estimate.

$$RSE\% = \left( \frac{SE}{estimate} \right) \times 100$$

**3** RSEs for estimates from 2009 SEW were calculated for each separate estimate and published in the 'direct' form. The Jackknife method of variance estimation is used for this process, which involves the calculation of 30 'replicate' estimates based on 30 different sub samples of the original sample. The variability of estimates obtained from these sub samples is used to estimate the sample variability surrounding the main estimate.

**4** Tables 2, 7, 8, 22 and 23 contain estimates collected from previous Education and Work



surveys. The spreadsheets associated with this release contain RSEs for these estimates. The RSEs for the years 2001 and 2003 were calculated using the previous statistical SE models, which are available from each relevant issue of **Education and Work, Australia (cat. no. 6227.0)** available on the ABS website <www.abs.gov.au>. For the 2005, 2007 and 2008 data, the RSEs were directly calculated for each separate estimate. This method differs from that presented in the 2005 publication, which describes using statistical SE models to calculate RSEs for all time points. While the direct method is more accurate, the difference between the two is usually not significant for most estimates.

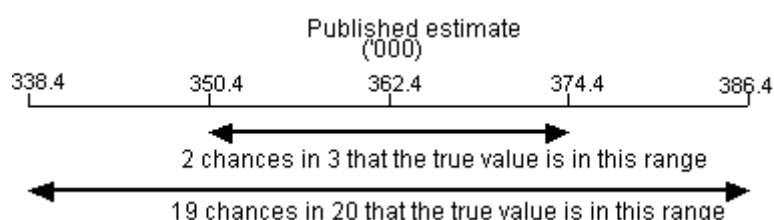
**5** In the tables in this publication, only estimates (numbers, percentages, means and medians) with RSEs less than 25% are considered sufficiently reliable for most purposes. However, estimates with larger RSEs are included and preceded by an asterisk (e.g. \*1.3) to indicate they are subject to high SEs and should be used with caution. Estimates with RSEs greater than 50% are preceded by a double asterisk (e.g. \*\*0.6) to indicate that they are considered too unreliable for general use.

## CALCULATION OF STANDARD ERROR

**6** Standard errors can be calculated using the estimates (counts or means) and the corresponding RSEs. For example, Table 1 shows the estimated number of females in Victoria enrolled in a course of study was 362,400. The RSE Table corresponding to the estimates in Table 1 (see Table 1 Relative Standard Errors in the 'Relative Standard Error' section at the end of these Technical Notes) shows the RSE for this estimate is 3.3%. The SE is calculated by:

$$\begin{aligned}
 &SE \text{ of estimate} \\
 &= \left( \frac{RSE}{100} \right) \times \text{estimate} \\
 &= 0.033 \times 362,400 \\
 &= 12,000 \text{ (rounded to the nearest hundred)}
 \end{aligned}$$

**7** Therefore, there are about two chances in three that the value that would have been produced if all dwellings had been included in the survey will fall within the range 350,400 to 374,400 and about 19 chances in 20 that the value will fall within the range 338,400 to 386,400. This example is illustrated in the diagram below:



## PROPORTION AND PERCENTAGES

**8** Proportions and percentages formed from the ratio of two estimates are also subject to sampling errors. The size of the error depends on the accuracy of both the numerator and the denominator. A formula to approximate the RSE of a proportion is given below. This formula is only valid when x is a subset of y.

$$RSE\left(\frac{x}{y}\right) = \sqrt{[RSE(x)]^2 + [RSE(y)]^2}$$

**9** As an example, using estimates from Table 1, of the 688,300 persons enrolled in a course

of study in Victoria, 362,400 are females, or 52.7%. The RSE for 362,400 is 3.3% and the RSE for 688,300 is 2.3% (see Table 1 Relative Standard Errors in the section 'Relative Standard Error' at the end of these Technical Notes). Applying the above formula, the RSE for the proportion of females in Victoria enrolled in a course of study:

$$RSE = \sqrt{(3.3)^2 - (2.3)^2} = 2.4\%$$

**10** Therefore, the SE for the proportion of females in Victoria enrolled in a course of study is 1.3 percentage points  $(= (2.4/100) \times 52.7)$ . Hence, there are about two chances in three that the proportion of females in Victoria enrolled in a course of study is between 51.4% and 54.0%, and 19 chances in 20 that the proportion is between 50.1% and 55.3%.

## DIFFERENCES

**11** Published estimates may also be used to calculate the difference between two survey estimates (of numbers or percentages). Such an estimate is subject to sampling error. The sampling error of the difference between two estimates depends on their SEs and the relationship (correlation) between them. An approximate SE of the difference between two estimates (x-y) may be calculated by the following formula:

$$SE(x-y) = \sqrt{[SE(x)]^2 + [SE(y)]^2}$$

**12** While this formula will only be exact for differences between separate and uncorrelated characteristics or sub populations, it is expected to provide a good approximation for all differences likely to be of interest in this publication.

## SIGNIFICANCE TESTING

**13** A statistical significance test for any of the comparisons between estimates can be performed to determine whether it is likely that there is a difference between the corresponding population characteristics. The standard error of the difference between two corresponding estimates (x and y) can be calculated using the formula in paragraph 12. This standard error is then used to calculate the following test statistic:

$$\left( \frac{x-y}{SE(x-y)} \right)$$

**14** If the value of this test statistic is greater than 1.96 then there is statistical evidence of a significant difference in the two populations with respect to that characteristic. This statistic corresponds to a 95% confidence interval of the estimate. Otherwise, it cannot be stated with confidence that there is a real difference between the populations.

**15** The imprecision due to sampling variability, which is measured by the SE, should not be confused with inaccuracies that may occur because of imperfections in reporting by respondents and recording by interviewers, and errors made in coding and processing data. Inaccuracies of this kind are referred to as non-sampling error, and they occur in any enumeration, whether it be a full count or sample. Every effort is made to reduce non-sampling error to a minimum by careful design of questionnaires, intensive training and supervision of interviewers, and efficient operating procedures.

## RELATIVE STANDARD ERROR

**16** Limited publication space does not allow for the separate indication of the SEs and/or RSEs of all the estimates in this publication, only RSEs for Table 1 are included below. However, RSEs for all tables are available free-of-charge on the ABS website <[www.abs.gov.au](http://www.abs.gov.au)>, released in spreadsheet format as an attachment to this publication, **Education and Work, Australia, May 2009 (cat. no. 6227.0).**

**TABLE 1 RELATIVE STANDARD ERRORS, Persons aged 15-64 years enrolled in a course of study - Selected characteristics by state or territory of usual residence**

|  | NSW<br>%   | Vic.<br>%  | Qld<br>%   | SA<br>%    | WA<br>%    | Tas.<br>%  | NT<br>%    | ACT<br>%   | Aust.<br>% |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Sex  |            |            |            |            |            |            |            |            |            |
| Males                                      | 2.9        | 2.8        | 4.5        | 4.5        | 5.5        | 6.6        | 9.1        | 7.6        | 1.5        |
| Females                                    | 3.4        | 3.3        | 4.8        | 4.7        | 3.8        | 6.4        | 10.3       | 6.7        | 1.7        |
| Age group (years)                          |            |            |            |            |            |            |            |            |            |
| 15-19                                      | 2.4        | 2.0        | 3.3        | 3.1        | 4.5        | 5.9        | 6.4        | 4.7        | 1.2        |
| 20-24                                      | 5.4        | 4.8        | 10.1       | 7.2        | 7.7        | 12.6       | 16.6       | 12.2       | 3.0        |
| 25-34                                      | 9.2        | 5.5        | 8.4        | 8.5        | 12.0       | 13.3       | 15.8       | 10.0       | 4.2        |
| 35-44                                      | 6.9        | 8.7        | 11.2       | 9.4        | 9.1        | 14.2       | 22.5       | 21.9       | 4.2        |
| 45-54                                      | 11.5       | 11.6       | 10.8       | 13.3       | 17.3       | 15.1       | 25.0       | 20.3       | 6.3        |
| 55-64                                      | 15.2       | 21.8       | 21.5       | 19.3       | 30.9       | 24.4       | 33.6       | 36.0       | 8.5        |
| Country of birth                           |            |            |            |            |            |            |            |            |            |
| Born in Australia                          | 3.0        | 3.1        | 3.4        | 4.3        | 5.4        | 4.5        | 6.4        | 5.5        | 1.6        |
| Born overseas                              | 6.4        | 8.0        | 10.0       | 9.1        | 9.8        | 20.3       | 23.7       | 16.2       | 3.1        |
| Area of usual residence                    |            |            |            |            |            |            |            |            |            |
| State capital city                         | 3.2        | 2.8        | 5.8        | 3.4        | 4.0        | 7.7        | ..         | ..         | 1.5        |
| Balance of state/Territory                 | 4.9        | 4.4        | 5.6        | 10.1       | 10.3       | 5.8        | 6.7        | 5.9        | 2.8        |
| Labour force status                        |            |            |            |            |            |            |            |            |            |
| In labour force                            | 3.6        | 3.5        | 4.5        | 4.6        | 3.7        | 5.6        | 9.2        | 6.8        | 1.8        |
| Employed                                   | 3.4        | 4.0        | 4.5        | 4.3        | 4.4        | 6.0        | 9.8        | 7.4        | 1.8        |
| Employed full time                         | 6.8        | 6.6        | 5.5        | 7.4        | 8.7        | 10.8       | 11.1       | 9.4        | 2.5        |
| Employed part time                         | 4.0        | 5.1        | 5.9        | 7.9        | 6.4        | 10.4       | 16.1       | 9.5        | 2.3        |
| Unemployed                                 | 10.9       | 11.8       | 13.7       | 16.6       | 20.5       | 28.8       | 40.6       | 29.7       | 6.6        |
| Not in labour force                        | 4.7        | 5.5        | 8.5        | 6.7        | 8.9        | 11.5       | 11.9       | 11.4       | 2.3        |
| Level of education of study in May 2009(a) |            |            |            |            |            |            |            |            |            |
| Study for a qualification(b)               | 2.9        | 2.4        | 4.0        | 3.0        | 4.0        | 5.3        | 7.1        | 6.2        | 1.4        |
| Postgraduate Degree                        | 15.0       | 7.7        | 20.3       | 14.5       | 14.8       | 23.9       | 36.2       | 20.4       | 6.9        |
| Graduate Diploma/Graduate Certificate      | 25.5       | 16.3       | 17.0       | 37.0       | 24.4       | 27.9       | 60.0       | 26.3       | 10.6       |
| Bachelor Degree                            | 5.1        | 6.1        | 8.0        | 8.2        | 8.0        | 16.4       | 19.5       | 13.9       | 2.9        |
| Advanced Diploma/Diploma                   | 8.2        | 9.0        | 9.8        | 14.5       | 10.6       | 18.8       | 19.3       | 17.3       | 3.7        |
| Certificate III/IV                         | 8.0        | 8.0        | 9.7        | 9.3        | 10.9       | 12.5       | 21.0       | 17.8       | 4.1        |
| Certificate I/II                           | 15.9       | 22.8       | 21.2       | 32.6       | 29.8       | 32.0       | 48.5       | 30.9       | 9.0        |
| Certificate n.f.d.                         | 17.2       | 14.8       | 17.5       | 19.5       | 21.5       | 39.7       | 32.0       | 55.1       | 9.5        |
| Year 12 or below                           | 2.8        | 2.6        | 4.6        | 3.6        | 5.2        | 5.9        | 7.6        | 5.1        | 1.4        |
| Study not for a qualification              | 16.1       | 19.4       | 18.1       | 18.5       | 28.1       | 21.6       | 47.9       | 37.1       | 8.2        |
| Type of educational institution            |            |            |            |            |            |            |            |            |            |
| School                                     | 2.8        | 2.8        | 4.8        | 4.2        | 5.4        | 6.0        | 7.1        | 5.0        | 1.3        |
| TAFE                                       | 5.0        | 5.1        | 8.2        | 7.8        | 9.4        | 10.6       | 23.8       | 16.1       | 3.1        |
| Higher education                           | 5.6        | 5.3        | 8.4        | 6.2        | 7.1        | 13.7       | 13.1       | 11.4       | 2.9        |
| Other institution                          | 7.7        | 8.4        | 8.9        | 11.6       | 10.9       | 15.7       | 17.2       | 19.5       | 4.3        |
| Type of enrolment                          |            |            |            |            |            |            |            |            |            |
| Full-time enrolment                        | 3.5        | 3.3        | 5.3        | 3.7        | 4.7        | 7.6        | 8.1        | 8.9        | 1.6        |
| Part-time enrolment                        | 5.2        | 5.4        | 4.9        | 6.3        | 6.5        | 7.0        | 10.8       | 8.7        | 2.1        |
| <b>Total</b>                               | <b>2.8</b> | <b>2.3</b> | <b>3.9</b> | <b>2.9</b> | <b>3.9</b> | <b>4.9</b> | <b>6.7</b> | <b>5.9</b> | <b>1.2</b> |

.. not applicable

- (a) The levels of education are not necessarily listed in order from highest to lowest. For further details see paragraphs 20-22 of the Explanatory Notes.
- (b) Includes 'Level not determined'.

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